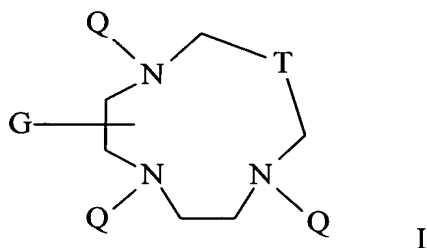


Amendment to the Claims:

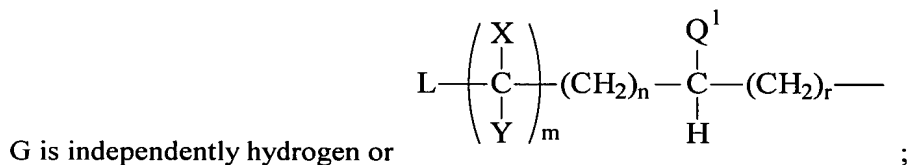
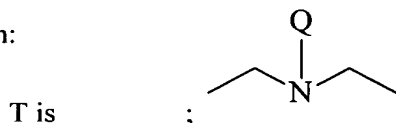
This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

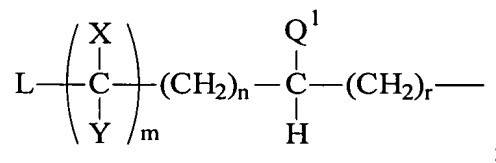
1. (Currently amended) An Actinium-225 complex comprising a functionalized polyazamacrocyclic chelant compound of the formula I, hereinbelow:



wherein:



each Q is independently hydrogen, $(CHR^5)_pCO_2R$ or $(CHR^5)_pPO_3R^6R^7$ or



Q^1 is hydrogen, $(CHR^5)_wCO_2R$ or $(CHR^5)_wPO_3R^6R^7$;

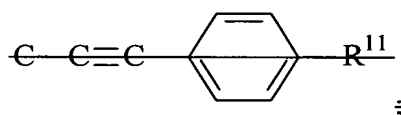
each R is independently hydrogen, benzyl or C_1 - C_4 alkyl; R^6 and R^7 are independently H, C_1 - C_6 alkyl or $(C_1$ - C_2 alkyl)phenyl;

each R^5 is independently hydrogen; C_1 - C_4 alkyl or

(C_1 - C_2 alkyl)phenyl;

with the proviso that at least two of the sum of Q and Q^1 must be other than hydrogen;

A is ~~CH, N, C-Br, C-Cl, C-SO₃H, C-OR⁸, C-OR⁹N⁺R¹⁰X⁻, or~~



~~Z and Z¹ independently are CH, N, C-SO₃H, N⁺R¹⁰X⁻, C-CH₂-OR⁸ or C-C(O)-R¹¹;~~

~~R⁸ is H, C₁-C₅ alkyl, benzyl, or benzyl substituted with at least one R¹²;~~

~~R⁹ is C₁-C₁₆ alkylamino;~~

~~R¹⁰ is C₁-C₁₆ alkyl, benzyl, or benzyl substituted with at least one R¹²;~~

~~R¹¹ is O-(C₁-C₃ alkyl), OH or NHR¹³;~~

~~R¹² is H, NO₂, NH₂, isothiocyanato, semicarbazido, thiosemicarbazido, maleimido, bromoacetamido or carboxyl;~~

~~R¹³ is C₁-C₅ alkyl;~~

X and Y are each independently hydrogen or may be taken with an adjacent X and Y to form an additional carbon-carbon bond;

n is 0 or 1;

m is an integer from 0 to 10 inclusive;

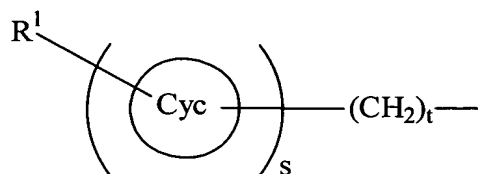
p is 1 or 2;

r is 0 or 1;

w is 0 or 1;

with the proviso that n is only 1 when X and/or Y form an additional carbon-carbon bond, and the sum of r and w is 0 or 1;

L is a linker/spacer group covalently bonded to, and replaces one hydrogen atom of one of the carbon atoms to which it is joined, said linker/spacer group being represented by the formula



wherein:

s is an integer of 0 or 1;

t is an integer of 0 to 20 inclusive;

R¹ is H, NO₂, NH₂, isothiocyanato, semicarbazido, thiosemicarbazido, maleimido, bromoacetamido or carboxyl or ~~an electrophilic or nucleophilic moiety which allows for covalent attachment to a biological carrier, or synthetic linker which can be attached to a biological carrier, or precursor thereof;~~ and

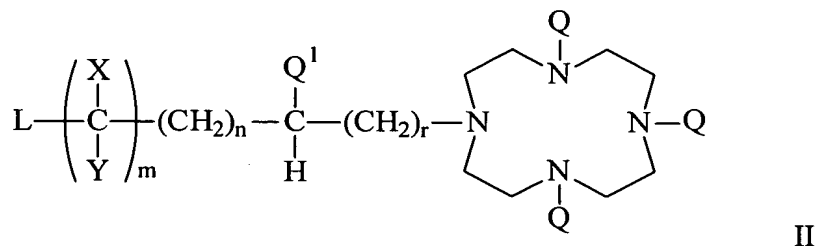
Cyc represents a cyclic aliphatic moiety, aromatic moiety, aliphatic heterocyclic moiety, or aromatic heterocyclic moiety, each of said moieties optionally substituted with one or more groups which do not interfere with binding to a biological carrier selected from the group consisting of a protein, antibody, antibody fragment, hormone, peptide, growth factor, antigen or hapten;

with the proviso that when R¹ is H, the linkage to the biological carrier is through one of Q or Q¹; and with the proviso that when R¹ is other than H, at least one of Q and Q¹ must be (CHR⁵)_pPO₃R⁶R⁷; and with further proviso that when Q is (CHR⁵)_pCO₂R, Q¹ is (CHR⁵)_wCO₂R, R is H, R⁵ is H, and R¹ is H, then the sum of m, n, p, r, s, t, and w is greater than 1;

or pharmaceutically acceptable salt thereof; complexed with ²²⁵Ac.

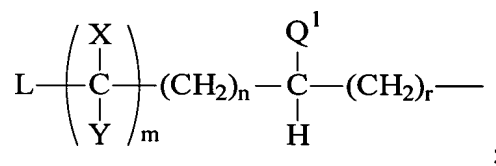
2. (Original) A conjugate comprising the complex of Claim 1 covalently attached to a biological carrier.
3. (Original) The conjugate according to Claim 2 wherein the biological carrier is a protein, antibody, antibody fragment, hormone, peptide, growth factor, antigen or hapten.
4. (Cancelled)

5. (Currently amended) The complex according to Claim 1 wherein the functionalized chelant is a compound of formula II



wherein:

each Q is independently hydrogen, $(\text{CHR}^5)_p\text{CO}_2\text{R}$ or $(\text{CHR}^5)_p\text{PO}_3\text{R}^6\text{R}^7$ or



Q^1 is hydrogen, $(\text{CHR}^5)_w\text{CO}_2\text{R}$ or $(\text{CHR}^5)_w\text{PO}_3\text{R}^6\text{R}^7$;

each R is independently hydrogen, benzyl or C_1 - C_4 alkyl; R^6 and R^7 are independently H, C_1 - C_6 alkyl or $(\text{C}_1$ - C_2 alkyl)phenyl;

each R^5 is independently hydrogen; C_1 - C_4 alkyl or $(\text{C}_1$ - C_2 alkyl)phenyl;

with the proviso that at least two of the sum of Q and Q^1 must be other than hydrogen;

X and Y are each independently hydrogen or may be taken with an adjacent X and Y to form an additional carbon-carbon bond;

n is 0 or 1;

m is an integer from 0 to 10 inclusive;

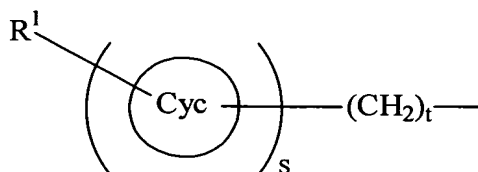
p is 1 or 2;

r is 0 or 1;

w is 0 or 1;

with the proviso that n is only 1 when X and/or Y form an additional carbon-carbon bond, and the sum of r and w is 0 or 1;

L is a linker/spacer group covalently bonded to, and replaces one hydrogen atom of one of the carbon atoms to which it is joined, said linker/spacer group being represented by the formula



wherein:

s is an integer of 0 or 1;

t is an integer of 0 to 20 inclusive;

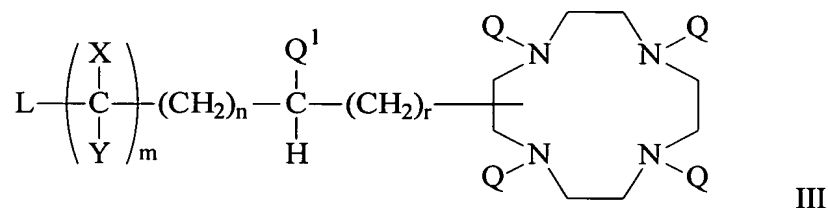
R¹ is H-, NO₂, NH₂, isothiocyanato, semicarbazido, thiosemicarbazido, maleimido, bromoacetamido or carboxyl~~or an electrophilic or nucleophilic moiety which allows for covalent attachment to a biological carrier, or synthetic linker which can be attached to a biological carrier, or precursor thereof;~~ and

Cyc represents a cyclic aliphatic moiety, aromatic moiety, aliphatic heterocyclic moiety, or aromatic heterocyclic moiety, each of said moieties optionally substituted with one or more groups which do not interfere with binding to a biological carrier selected from the group consisting of a protein, antibody, antibody fragment, hormone, peptide, growth factor, antigen or hapten;

with the proviso that when R¹ is H, the linkage to the biological carrier is through one of Q or Q¹; and with the proviso that when R¹ is other than H, at least one of Q and Q¹ must be (CHR⁵)_pPO₃R⁶R⁷; and with further proviso that when Q is (CHR⁵)_pCO₂R, Q¹ is (CHR⁵)_wCO₂R, R is H, R⁵ is H, and R¹ is H, then the sum of m, n, p, r, s, t, and w is greater than 1;

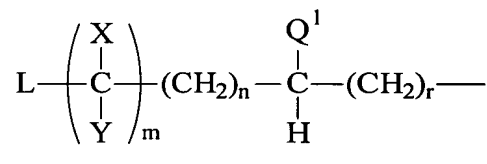
or pharmaceutically acceptable salt thereof.

6. (Currently amended) The complex according to Claim 1 wherein the functionalized chelant is a compound of formula III



wherein:

each Q is independently hydrogen, $(\text{CHR}^5)_p\text{CO}_2\text{R}$ or $(\text{CHR}^5)_p\text{PO}_3\text{R}^6\text{R}^7$ or



;

Q^1 is hydrogen, $(\text{CHR}^5)_w\text{CO}_2\text{R}$ or $(\text{CHR}^5)_w\text{PO}_3\text{R}^6\text{R}^7$;

each R is independently hydrogen, benzyl or C_1 - C_4 alkyl; R^6 and R^7 are independently H, C_1 - C_6 alkyl or $(\text{C}_1$ - C_2 alkyl)phenyl;

each R^5 is independently hydrogen; C_1 - C_4 alkyl or $(\text{C}_1$ - C_2 alkyl)phenyl;

with the proviso that at least two of the sum of Q and Q^1 must be other than hydrogen;

X and Y are each independently hydrogen or may be taken with an adjacent X and Y to form an additional carbon-carbon bond;

n is 0 or 1;

m is an integer from 0 to 10 inclusive;

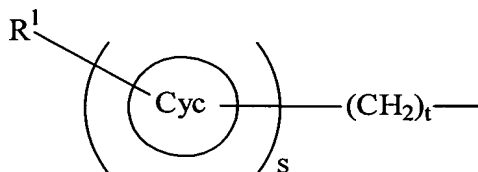
p is 1 or 2;

r is 0 or 1;

w is 0 or 1;

with the proviso that n is only 1 when X and/or Y form an additional carbon-carbon bond, and the sum of r and w is 0 or 1;

L is a linker/spacer group covalently bonded to, and replaces one hydrogen atom of one of the carbon atoms to which it is joined, said linker/spacer group being represented by the formula



wherein:

s is an integer of 0 or 1;

t is an integer of 0 to 20 inclusive;

R¹ is H-, NO₂, NH₂, isothiocyanato, semicarbazido, thiosemicarbazido, maleimido, bromoacetamido or carboxyl~~er an electrophilic or nucleophilic moiety which allows for covalent attachment to a biological carrier, or synthetic linker which can be attached to a biological carrier, or precursor thereof;~~ and

Cyc represents a cyclic aliphatic moiety, aromatic moiety, aliphatic heterocyclic moiety, or aromatic heterocyclic moiety, each of said moieties optionally substituted with one or more groups which do not interfere with binding to a biological carrier selected from the group consisting of a protein, antibody, antibody fragment, hormone, peptide, growth factor, antigen or hapten;

with the proviso that when R¹ is H, the linkage to the biological carrier is through one of Q or Q¹; and with the proviso that when R¹ is other than H, at least one of Q and Q¹ must be (CHR⁵)_pPO₃R⁶R⁷; and with further proviso that when Q is (CHR⁵)_pCO₂R, Q¹ is (CHR⁵)_wCO₂R, R is H, R⁵ is H, and R¹ is H, then the sum of m, n, p, r, s, t, and w is greater than 1;

or a pharmaceutically acceptable salt thereof.

7. (Original) A conjugate according to Claim 2 comprising the ^{225}Ac complex of DOTA (1,4,7,10-tetraazacyclododecane-1,4,7,10-tetraacetic acid) covalently attached via amide linkage to a biological carrier.
8. (Original) A conjugate according to Claim 2 comprising the ^{225}Ac complex of 2-(p-isothiocyanatobenzyl)-1,4,7,10-tetraazacyclododecane-1,4,7,10-tetraacetic acid covalently attached to a biological carrier.
9. (Original) A pharmaceutical formulation comprising the ^{225}Ac conjugate of Claim 2 and a pharmaceutically acceptable carrier.
10. (Original) The formulation of Claim 9 wherein the pharmaceutically acceptable carrier is a liquid.
11. (Original) A method of therapeutic treatment of a mammal having cancer which comprises administering to said mammal a therapeutically effective amount of the formulation of Claim 9.